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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/988,388	11/19/2001	Bruno Motzet	1748X/50610	8243
7590 07/14/2004 CROWELL & MORING, L.L.P. P.O. Box 14300 Washington, DC 20044-4300			EXAMINER KERNS, KEVIN P	
			ART UNIT 1725	PAPER NUMBER
DATE MAILED: 07/14/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/988,388	MOTZET ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Kevin P. Kerns	1725	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 November 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 February 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>11/19/01 &amp; 2/28/03</u> .  | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: "8" (Figure 3). Corrected drawing sheets, or amendment to the specification to add the reference character(s) in the description, are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: there is no disclosure of "control valve" (claim 8).

### ***Claim Objections***

3. Claim 5 is objected to because of the following informalities: at the end of the 3<sup>rd</sup> line of the claim, "be" should be added after "to". Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-3, 6-11, and 14-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Gonjo et al. (EP 0 861 802 A2).

Gonjo et al. disclose a fuel reforming apparatus and process for using the reformer to produce hydrogen from hydrocarbons/alcohols, in which the apparatus/process includes a reforming portion 4, an evaporation portion 2 having plural evaporation stages, a normalizing stage that includes heat transfer fins 27 and a catalytically heated reactor (6a,6b), and a control unit that includes valves and temperature sensors in the flow lines (abstract; columns 6-9 and 11-38; and Figures 1-7, 9-16, and 18-26).

6. Claims 1-3, 6-11, and 14-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Beshty (US 4,946,667).

Beshty discloses a method and apparatus for steam reforming methanol to hydrogen, in which the method/apparatus includes a reformer 18, a vaporizer 11 that feeds a burner/superheater (13,14), forming plural evaporation stages, a normalizing

stage as a portion of the superheater 13, serving as heat transfer means, and a control unit that includes valves and temperature sensors in the flow lines (abstract; column 1, lines 10-14; column 2, lines 27-68; column 3, lines 1-3 and 15-68; column 4, line 1 through column 6, line 8; and Figures 1-6).

7. Claims 1-3, 6, 9-11, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by the JP 4-187502 (abstract).

JP 4-187502 discloses an apparatus that includes a fuel flow-stabilizing plate for a fuel cell (conversion of fuel gas to hydrogen), in which the apparatus is comprised of a reformer 10, plural evaporator stages (vaporizer 4), and a normalizing stage, in the form of a heat exchanger (superheater 5) (abstract; and Figures).

8. Claims 1-3, 6, 9-11, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 3-199102 (abstract).

JP 3-199102 discloses a reforming device for methanol and method for using the reforming device, in which the apparatus includes a reformer, plural evaporation stages 2, and a normalizing stage, in the form of a heat exchanger (superheater 5) (abstract; and Figures).

### ***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 4, 5, 12, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over any one of Gonjo et al. (EP 0 861 802 A2), Beshty (US 4,946,667), JP 4-187502, or JP 3-199102.

Gonjo et al., Beshty, JP 4-187502, and JP 3-199102 individually disclose the features of independent claims 1 and 9. Although none of these references specifically discloses that the normalizing stage is an adiabatic stage, one of ordinary skill in the art would have recognized that the use of an adiabatic stage would result in higher efficiency due to the system retaining heat produced in the process, so that this heat would be used to provide energy to another portion of the reformer.

**Conclusion**

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Autenrieth et al. reference is also cited as related art.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kevin P. Kerns whose telephone number is (571) 272-1178. The examiner can normally be reached on Monday-Friday from 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (571) 272-1171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kevin P. Kerns *Kevin Kerns 7/12/04*  
Examiner  
Art Unit 1725

KPK  
kpk  
July 12, 2004